

# EXHIBIT 10

**DECLARATION OF ERIN J. ADAMS**

I, Erin J. Adams, declare as follows:

1. I am the Vice Provost for Research at the University of Chicago (UChicago) in Chicago, Illinois. I have held that position since September 2023. As Vice Provost for Research, I have oversight of UChicago's office for University Research Administration, Research Safety, and Research Computing and am responsible for managing our grant portfolio as well as research compliance. In addition to my current role, I am the Joseph Regenstein Professor of Biochemistry and Molecular Biology and have been a Professor at UChicago for 19 years.

2. As the Vice Provost for Research, I have personal knowledge of the contents of this declaration, or have knowledge of the matters based on my review of information and records gathered by my staff and colleagues.

3. UChicago receives substantial annual funding from the National Science Foundation ("NSF"). Since July 1, 2024, we have received 307 new awards totaling approximately \$94.2 million in funding from NSF. During the same period, NSF has supported 438 funded grants and cooperative agreements for a total of approximately \$80.7 million with the following breakdown: approximately \$59.5 million in direct costs and \$21.2 million in indirect costs. Approximately \$66 million are grants and approximately \$15 million are cooperative agreements.

4. UChicago intends to apply for new funding awards, and/or renewals and continuations of existing funding awards, in the next year and in future years.

5. The funding UChicago receives from NSF supports critical and cutting-edge research vital to U.S. innovation, economic growth, global competitiveness and national security. Millions of Americans benefit from and depend on this type of research. For example:

- a. UChicago's NSF-funded engineering research in quantum technology development includes:
  - i. Research on developing quantum sensors capable of probing the physical properties of biological and living systems at the nano- and microscale, with resulting insights that are translatable into real-world applications, helping to ensure the national security of the United States and economic leadership. For example, these sensors are developed to detect hazardous chemical and biological substances, provide rapid diagnostic screening, advance quality control in chemical and pharmaceutical manufacturing, and provide new tools to facilitate pharmaceutical research. This work has led to three separate patent applications.
  - ii. Research involving building a foundation for the quantum internet, interconnects for superconducting-atomic quantum networks, design and implementation of quantum databases, nanoscale magnetometry with diamond quantum sensors, and the development of quantum information science and engineering research capacity – research which lays the foundation for future networking infrastructure to position the United States as a leader in information technology.
  - iii. As a part of NSF's Quantum Leap Challenge Institutes (QLCI) program, research on quantum architecture and networking, including support for graduate students and postdoctoral researchers. This grant provides important support for technology and workforce development.

- iv. Research involving the development of iron-based topological superconductors on oxide substrates to realize a new scheme of quantum computing, which aims to provide a secure channel for computing and communication, both of which are critical to national security.
- v. Research that seeks to establish a future paradigm for quantum material fabrication – using artificial intelligence to optimize material growth one atomic layer at a time. This project, if successful, will redefine the fabrication protocol for crystalline quantum materials, create new industries and new jobs, and significantly accelerate the fabrication, optimization, and utilization of quantum materials in quantum devices, boosting the quantum economy and contributing to national security.

b. UChicago's other NSF-funded engineering research includes:

- i. Critical research on the circular water economy (NSF ReNEW Engine) centered around the Great Lakes, attracting manufacturing, recovering resources from wastewater and working towards a water-focused economic ecosystem.
- ii. Research on sustainable electronics (MADE-PUBLIC) which involves the distributed printing of low-cost, biodegradable, and recyclable electronic devices using locally identifiable resources, such as bio-based materials derived from plants.
- iii. Development of the Dynamic PicoProbe, to study the time-resolved interface between liquid/solid/hard/soft matter in areas relevant to engineering and materials research with applications in the water-

energy nexus, catalysis, quantum electronics, bioelectronics, cancer therapy, and protein engineering.

- iv. Research on lithography, the basis for high-volume semiconducting manufacturing, that focuses on the disruptive development of new patterning materials and processes which will contribute to U.S. semiconductor manufacturing competitiveness and help to address critical workforce gaps.
- v. Research on buried wireless sensor networks that will enable geospatial information processing targeted towards agriculture, terrestrial ecology and materials research for sensing, which is relevant to national security applications in the DHS and USDA.

c. UChicago's NSF-funded research in the physical sciences includes:

- i. The development and construction of high-speed, real-time microelectronics systems that deploy artificial intelligence (AI) for real-time rapid data processing and filtering for high-energy particle physics. These systems help to drive innovation in precision sensing, data acquisition, and high-throughput computing. The resulting technologies have been translated to commercial applications in semiconductor manufacturing, medical imaging, aerospace, defense, and finance, with further applications being explored.
- ii. The development of new sensor technologies, including superconducting nanowire single-photon detectors (SNSPDs), which are pushing the limits of precision measurement and enabling

transformative technologies in both fundamental science and real-world applications. SNSPDs are also enabling breakthroughs in quantum communications, LIDAR systems, deep-space optical communication, and secure quantum key distribution—all with profound implications for national security, cybersecurity, precision navigation, and space exploration. These detectors are also critical components in the broader U.S. quantum technology ecosystem, contributing to the development of quantum networks and sensors with applications in gravitational wave detection, materials science, and biomedical imaging.

- iii. Through the NSF-funded QuBBE Center, the creation of a magnetic resonance facility within UChicago’s medical center to allow quantum sensors to sense metabolites within living cells. Quantum sensing requires measurement modalities not typically found in medical or biological facilities, but the ultrasensitive measurements enabled by quantum sensors are ideal for probing the biological systems at the nanometer scale.
- iv. Through the NSF-supported South Pole Telescope and CMB-S4 experiments to survey the sky, studies to advance the understanding of the cosmic microwave background while also providing training in super-conducting devices and electronics related to quantum computing techniques and in the analysis of large and complex datasets.
- v. Through the NSF-funded Physics Frontier Center, the development of a quantitative description of living systems, with a particular focus on

how life, at all scales, adapts and evolves. This research aims to drive advances in biotechnology, agriculture, human health, robotics, and energy. The Center contributes to training dozens of graduate students and postdoctoral researchers in physics and the related fields of biology, mathematics, engineering and chemistry.

- vi. Research in secure scientific cyberinfrastructure that also supports the development of platforms for managing trustworthy, Linux container-based software environments used in scientific computing. This helps to enhance national security and public trust by protecting research integrity from supply chain attacks and promoting reproducibility, traceability, and secure collaboration across distributed computing resources.
- vii. Research involving AI-enabled autonomic cyberinfrastructure projects that integrate large language models, reinforcement learning, and intelligent agents to manage and optimize global-scale scientific computing systems such as the Worldwide LHC Computing Grid. By enabling a self-healing, predictive, and adaptive infrastructure, these projects help to advance national security and public benefit through increased system resilience of shared computing resources and has broader applicability to critical domains like advanced manufacturing.
- viii. Research involving the development of AI to identify rare or anomalous events in high-energy particle physics experiments, optimize detector performance, and extract subtle signals buried in complex backgrounds.

This work helps to drive innovation in interpretable AI, low-power inference at the edge, and autonomous experimentation, with direct commercial applications in identifying rare disease markers in biomedical imaging and optimizing production in additive manufacturing systems.

- ix. Through the NSF-funded Institute for Mathematical and Statistical Innovation (IMSI), research covering a broad spectrum of applied mathematics and statistics, with special emphasis on improving the efficiency of machine learning algorithms, increasing their trustworthiness, and making them more explainable; the mathematical and statistical questions surrounding quantum computing; new approaches to personalized medicine, designing clinical trials, and studying the interplay between finance and efforts to develop treatments for rare diseases; and predicting extreme weather events, improving the accuracy of weather models, and modeling the interactions between weather and economic systems. These issues have relevance for national prosperity and welfare, with implications for agriculture, insurance, finance, and energy production, among other areas.

- d. UChicago's NSF-funded research in the social sciences includes:

- i. Artificial intelligence research involving the development of a platform that maps global science and technology ecosystems to guide U.S. strategy in critical technology sectors. The outcomes of this research will help to strengthen U.S. competitiveness, inform national security

strategy, and support innovation policy, supply chain resilience, and workforce development.

- ii. Research on cognition that supports national security by advancing understanding of memory, attention, perception, and decision-making under uncertainty. These studies aim to improve training systems for high-stress environments, inform decision-making protocols in intelligence and crisis response, and support real-time cognitive assessment tools for roles like drone operation and cybersecurity.
- iii. Economics research that creates advanced tools for analyzing urban systems, labor markets, earnings data, and social networks. These methods aim to improve forecasting, risk analysis, and infrastructure planning, equipping decisionmakers with tools to strengthen industries and adapt to economic shifts.
- iv. Research on learning and motor control that reveals how gesture and agency shape cognition, informing educational practices and training technologies to improve STEM learning outcomes and support workforce readiness and technological leadership by enabling smarter tools for education and human-machine collaboration.

e. UChicago's NSF-funded research in the biological sciences includes:

- i. Research on swallowing, one of the most complex and fundamental behaviors throughout the animal kingdom. This research uses radiological images to look at the ways bones and muscles work in living intact creatures, and paves the way for practical applications and

commercial ventures that can improve the quality of life for individuals with feeding and swallowing disorders.

- ii. Research exploring complex microbial communities in soil and how they adapt to changes in the environment. This work can inform strategies for maintaining soil health and tailoring crop management.
- iii. Research at the intersection of biotechnology and AI, which will be critical in ensuring that the United States continues as a leader in the high-stakes development of genomics. The combination of secure and portable data architectures, with easily accessible AI applications, are at the cutting edge of large-scale analysis of complex human data (such as hospital records, experimental data, and environmental data).

6. UChicago also receives NSF funding through multiple CAREER and other training awards that are essential for UChicago's training of the next generation of American scientists who will be responsible for protecting and expanding U.S. leadership in technology, innovation, defense, education and economic strength.

7. Reimbursement of UChicago's indirect costs is essential for supporting this and other research at UChicago. NSF's proposal to cut indirect cost rates to 15% would jeopardize the types of research projects described in paragraph 5.

8. Indirect costs include constructing and maintaining state-of-the-art laboratories and other facilities required to meet the current technical requirements of advanced research, and maintenance of equipment and laboratory space necessary to conduct such research, such as specialized testing environments, precision instrumentation and laboratory safety systems. Without this critical infrastructure, we would not be able to conduct such research.

9. For example, with respect to the areas of research described in Paragraph 5:
  - a. For NSF-funded research in engineering and the physical sciences:
    - i. Custom-built instrumentation including a dedicated single-molecule microscope, three separate optical experimental setups enabling coherent qubit control, and a dedicated 14 T NMR magnet integrated into a novel quantum sensor-enabled microscale high-resolution NMR system.
    - ii. Research space including cryogenic systems, which are critical for operating superconducting detectors at millikelvin temperatures, and cryogenic installations that consume large amounts of power. These require specialized water cooling and air handling equipment, including stringent requirements on temperature and cleanliness, and require engineering staff support for their development and maintenance, as well as for material handling.
    - iii. The Pritzker Nanofabrication Facility (PNF), which is a highly specialized facility with highly trained staff, stringent temperature and air quality control for the user space HVAC, technical support for the use and maintenance of toxic gases, stringent requirements for temperature-controlled water cooling, and extensive electrical power requirements, as well as numerous other infrastructure requirements.
    - iv. Laboratories with specialized electronics equipment and dedicated power and cooling infrastructure to develop, fabricate, operate, and repair large-scale electronics and computing systems.

- v. High-clearance high bays with heavy lifting cranes and dedicated laboratory space for the construction of industrial-scale scientific apparatus.
- vi. Clean room facilities for contamination-sensitive fabrication and assembly, as well as low-radiofrequency noise environments to ensure signal integrity in high-sensitivity measurements.
- vii. High-performance computing clusters and reconfigurable hardware testbeds for real-time algorithm development and AI training/inference.
- viii. For physics of living systems research, highly specialized laboratory equipment to maintain, manipulate and prepare biological specimens safely, as well as high-end equipment that enables direct measurements of processes that are occurring as small as 1/100 the size of a human hair.

b. For NSF-funded research performed in the social sciences:

- i. State-of-the-art research on memory and cognition requires neuroimaging labs (MRI/fMRI), EEG/ERP systems, behavioral suites with VR and monitoring capabilities, psychophysiological tools (e.g., eye tracking, heart rate variability), biological sample processing labs, and high-performance computing for data analysis.
- ii. Cutting-edge economic research depends on secure data enclaves for sensitive datasets, HPC systems for simulations and modeling, and advanced survey infrastructure.

iii. Research in education and workforce development uses longitudinal study platforms, learning analytics infrastructure, behavioral labs, and psychometric tools.

c. For NSF-funded research in the biological sciences:

i. For the establishment of secure and portable data architectures and easily accessible AI applications, highly specialized computer infrastructure located in the energy-efficient, state-of-the-art Kenwood Data Center on UChicago campus, a 4600-square-foot data center that has been tested to withstand extended power outages without system or service interruption, that is continuously staffed and monitored, and that is equipped to house systems that may fall under certain federal guidelines, including HIPAA and the Federal Information Security Management Act (FISMA).

ii. For research involving the biomechanics of swallowing, highly specialized X-ray Reconstruction of Moving Morphology (XROMM) technology, which combines scanned models of bone morphology with movement data from X-ray videos.

iii. For the study of complex microbial communities in soil, our state-of-the-art DNA sequencing facility.

10. Physical facilities costs are one of the largest components of indirect costs. This includes not only the usual costs of constructing and maintaining buildings where research occurs, but the costs of outfitting and maintaining specialized laboratory space, which can require special security, advanced HVAC systems, and specialized plumbing, electrical systems and waste

management, as well as specialized laboratory equipment. The features and amount of space available to researchers have a direct and obvious impact on the nature and amount of research that can be done at UChicago. Reduction in the indirect cost rate will have a direct impact on the availability of and ability to use this equipment in laboratories and in shared facilities, potentially reducing the number of hours these facilities can be open due to staff reductions, reduction in the maintenance and repairs of the equipment and ability to maintain specialized staff to train new graduate students and technicians.

11. In addition, indirect costs fund the administration of awards, including staff who ensure compliance with a vast number of regulatory mandates from agencies such as NSF. These mandates serve many important functions, including ensuring research integrity; protecting research subjects; properly managing and disposing of chemical and biological agents and other materials used in research; managing specialized procurement and security requirements for sensitive research; export controls; managing funds; providing the high level of cybersecurity, data storage, and computing environments mandated for regulated data; ensuring compliance with specialized security protocols and safety standards; maintaining facility accreditation and equipment calibration to meet research quality and security standards; and preventing financial conflicts of interest.

12. Recovery of UChicago's indirect costs is based on predetermined rates that have been contractually negotiated with the federal government.

13. UChicago has a Negotiated Indirect Cost Rate Agreement (NICRA) with the Department of Health and Human Services, (DHHS) dated as of April 10, 2024. The indirect cost (IDC) Rate in UChicago's NICRA is 64% of modified total direct costs for on-campus research activity.

14. UChicago negotiates its indirect cost rate with the DHHS every 4-5 years using a detailed and prescriptive methodology outlined in federal regulation. UChicago is also subject to rigorous annual audits pursuant to federal regulation, which help ensure appropriate reimbursement of its direct and indirect costs.

15. The negative impact of a reduction in the indirect cost rate to 15% would be significant. Of the approximately \$80.7 million in NSF funding reimbursed to UChicago since July 1, 2024, approximately \$59.5 million consisted of payment of direct costs (including \$6 million received for subcontracts), and approximately \$21.2 million consisted of reimbursement of indirect costs. And over the next five years, based on an average of the past five years, UChicago estimates receiving an average of \$56 million from the NSF for annual direct costs. Based on the predetermined indirect cost rate of 64%, which was agreed upon by the federal government as of April 10, 2024, UChicago expects to receive approximately \$19 million in indirect cost recovery on an annual basis.

16. If—contrary to what UChicago has negotiated with the federal government—the indirect cost rate is reduced to 15%, that reduction, if applied to UChicago’s entire NSF portfolio over the next five years, is estimated to reduce the University’s anticipated annual indirect cost recovery by approximately \$14.5 million, to approximately \$4.5 million.

17. In addition to the direct economic and scientific impact discussed above, I believe the proposed rate change will materially diminish the talent pipeline that research universities generate. In my view, a 15% indirect cost rate cap would likely result in losing talented scientific faculty to other countries that are investing heavily in research. Furthermore, these cuts are likely to impact universities’ ability to train graduate students, as universities would likely limit enrollment. This would mean fewer qualified candidates to be the United States’ future scientific

leaders in quantum, AI and other emerging technologies. I believe that curtailment of this pipeline will leave the United States less competitive across these and other critical sectors.

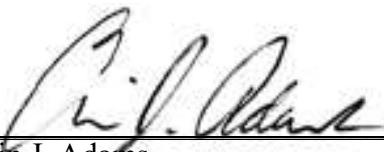
18. If implemented, the NSF reduction in the IDC to 15% would result in a material reduction in research funding for UChicago. UChicago makes long-term, highly-specialized infrastructure investments in the research it conducts in connection with its receipt of NSF grants. A mid-stream reduction of indirect costs would create immediate budget deficits.

19. In the near term, acceptance of a 15% indirect cost rate for renewals and new awards in the next few months will have immediate adverse budgetary implications for the University and impact project delivery. For example, with respect to the NSF-funded Institute for Mathematical and Statistical Innovation (ISMI) project described at paragraph 5.c.ix. above (for which the University reasonably anticipates award of a 5-year renewal) indirect cost recovery at 15% will adversely affect the infrastructure for the delivery of IMSI programming, in terms of maintaining adequate funding for space and support staff, in turn jeopardizing that programming.

20. The majority of UChicago's endowment is derived from philanthropic gifts. The use of these gifts is often legally restricted and must be used for designated purposes. Therefore, UChicago is unable to use the majority of its endowment funds to offset funding losses caused by a reduced IDC rate.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on this 7th day of May, 2025, in Chicago, Illinois.



Erin J. Adams  
Vice Provost for Research  
The University of Chicago